

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A method for depositing a layer on a substrate, ~~wherein a~~
comprising:
introducing a substrate (1; 101) is introduced into a processing chamber (2; 102);
~~wherein~~
generating at least one plasma (P) ~~is generated~~ by at least one plasma cascade source (3; 103); ~~wherein~~
depositing at least one deposition material (A) ~~is deposited~~ on the substrate (1; 101) under the influence of the plasma; (P), ~~characterized in that for~~ and
manufacturing a catalyst layer by depositing at least a second deposition material (B) ~~is deposited~~ on the substrate (101) by at least a second plasma cascade source, a plasma source, a vapor deposition source and/or a sputtering source (121).
2. (Currently amended) A method according to claim 1, wherein said deposition material (A, B) is supplied outside the at least one plasma source (3; 103) into the processing chamber (2; 102), preferably such as to the plasma [(P)] in the processing chamber.
3. (Currently amended) A method according to claim 1 ~~[[or 2]]~~, wherein at least one volatile compound of said deposition material (A, B) is supplied to the plasma [(P)] for the ~~purpose of the deposition.~~
4. (Currently amended) A method according to claim 3, wherein the volatile compound contains at least one precursor material which decomposes in the processing chamber (2; 102) in material to be deposited, before the material has reached the substrate (1; 101).
5. (Currently amended) A method according to ~~any one of the preceding claims~~ claim 1, wherein at least one sputtering electrode [(6)] which comprises said deposition material [(A, B)] is arranged in the processing chamber [(2)], and the plasma [(P)] is contacted with each sputtering electrode [(6)] to sputter the substrate [(1)] with the material [(A, B)] of the electrode [(6)].

6. (Currently amended) A method according to claim 5, wherein the plasma [(P)] is passed at least partly through at least one passage of the at least one sputtering electrode [(6)] to contact the plasma with the electrode [(6)].
7. (Currently amended) A method according to ~~any one of the preceding claims~~ claim 1, wherein said deposition material comprises at least one catalyst material [(A)] which, whether or not after an activation treatment such as [a] reducing [step], is catalytically active.
8. (Currently amended) A method according to ~~any one of the preceding claims~~ claim 1, wherein said deposition material comprises at least one carrier material [(B)], which material is ~~inherently~~ initially, or after a further treatment, suitable to carry catalyst material.
9. (Currently amended) A method according to ~~claims 7 and~~ claim 8, wherein the at least one catalyst material [(A)] and the at least one carrier material [(B)] are deposited on the substrate [(101)] by different sources (~~103, 103', 121, 121'.~~).
10. (Currently amended) A method according to ~~at least claims~~ claim 5, 7 and 8, wherein the at least one sputtering electrode [(6)] contains at least a part of both [said] a catalyst material [(A)] and [said] a carrier material [(B)].
11. (Currently amended) A method according to claim 10, wherein the sputtering electrode [(6)] contains compressed powders of said catalyst and carrier materials [(A, B)] to be deposited on the substrate [(1)].
12. (Currently amended) A method according to ~~at least~~ claim 10, wherein the at least one sputtering electrode [(6)] contains an alloy of said catalyst material [(A)] and said carrier material [(B)].
13. (Currently amended) A method according to ~~any one of the preceding claims~~ claim 1, wherein the substrate [(101)] comprises sheet material.

14. (Currently amended) A method according to ~~any one of the preceding claims~~ claim 1, wherein the substrate $[(101)]$ is moved in the processing chamber $[(102)]$ at least in such a way that each time a different part of the substrate $[(101)]$ makes contact with the plasma $[(P)]$.
15. (Currently amended) A method according to ~~any one of the preceding claims~~ claim 1, wherein the substrate $[(101)]$ is brought from an environment into the processing chamber $[(102)]$ and is discharged from the processing chamber $[(102)]$ to the environment while the deposition material is deposited on the substrate $[(101)]$ in the processing chamber $[(102)]$.
16. (Currently amended) A method according to ~~at least claim 1~~, wherein the substrate (1; ~~101~~) is substantially non-porous.
17. (Currently amended) A method according to ~~any one of the preceding claims~~ claim 1, wherein the substrate (1; ~~101~~) comprises at least one carrier material $[(B)]$.
18. (Currently amended) A method according to ~~any one of the preceding claims~~ claim 1, wherein the substrate (1; ~~101~~) comprises at least one metal and/or alloy.
19. (Currently amended) A method according to ~~any one of the preceding claims~~ claim 1, wherein the substrate (1; ~~101~~) comprises Fecralloy.
20. (Currently amended) A method according to ~~any one of the preceding claims~~ claim 1, wherein the substrate (1; ~~101~~) comprises corrugated material.
21. (Currently amended) A method according to ~~at least claim 1~~, wherein the substrate (1; ~~101~~) is substantially porous.
22. (Currently amended) A method according to ~~at least claim 8~~, wherein said carrier material $[(B)]$ comprises a metal.

23. (Currently amended) A method according to ~~at least~~ claim 8, wherein said carrier material ~~[[B]]~~ comprises an oxidized metal.
24. (Currently amended) A method according to ~~at least~~ claim 8, wherein said carrier material ~~[[B]]~~ comprises a semiconductor.
25. (Currently amended) A method according to ~~at least~~ claim 8, wherein said carrier material ~~[[B]]~~ comprises an oxidized semiconductor.
26. (Currently amended) A method according to claim 23 ~~and/or 25~~, wherein the carrier material ~~[[B]]~~ further contains a heat-conducting material, ~~such as carbon~~.
27. (Currently amended) A method according to ~~at least~~ claim 7, wherein the at least one catalyst material ~~[[A]]~~ comprises nickel, copper, palladium, rhodium, platinum ~~[[and/]]~~ or iron or any combination thereof.
28. (Currently amended) A method according to ~~at least claims~~ claim 7 ~~and 8~~, wherein the deposition material ~~[[A, B]]~~ is deposited such that the chemical composition of the deposited material measured over ~~distances of 5 cm, preferably over a distance of 10 cm, more particularly over a distance of 20 cm, and~~ differs by less than 10%, ~~in particular less than 50% and more particularly less than 1%.~~
29. (Currently amended) A method according to ~~any one of the preceding claims~~ claim 1, wherein ~~[[a]]~~ reducing ~~[[step]]~~ is carried out at an elevated temperature for the purpose of reduction of the deposition material ~~[[A]]~~ deposited on the substrate ~~[[1; 101]]~~.
30. (Currently amended) A method according to claim 29, wherein the reducing ~~[[step]]~~ is carried out under the influence of hydrogen.
31. (Currently amended) A method according to claim 30, wherein an inert gas, ~~such as nitrogen or argon~~, which contains hydrogen~~[[,]]~~ is supplied to the substrate ~~[[1; 101]]~~ for the purpose of the reduction.

32. (Currently amended) A method according to ~~any one of the preceding claims~~ claim 1, wherein the substrate (1; 101) is adjusted to a particular electrical potential, ~~for instance by~~ DC, pulsed DC and/or RF biasing.

33. (Currently amended) A method according to ~~any one of the preceding claims~~ claim 1, wherein the substrate (1; 101) is adjusted to a ~~particular~~ treatment temperature.

34. (Currently amended) An apparatus for depositing a layer on a substrate, ~~wherein the apparatus is provided with~~ comprising:

at least one plasma cascade source (3; 103) to generate at least one plasma (P), ~~the apparatus comprising means (6, 7) for bringing ;~~

a first deposition material source configured to bring a first deposition material [(A)] into each plasma; (P), ~~the apparatus being further provided with~~

a substrate positioning means (8; 118) positioner to bring and/or keep at least a part of a substrate (1; 101) in such a position in a processing chamber (2; 102) that the substrate (1; 101) makes contact with said plasma (P) ~~characterized in that, for manufacturing a catalyst, the apparatus comprises; and~~

a second plasma cascade source, a plasma source, a vapor deposition source and/or a sputtering source (121) ~~for depositing~~ configured to deposit at least a second deposition material [(B)] on the substrate [(101)].

35. (Currently amended) An apparatus according to claim 34, wherein the first deposition material source comprises ~~apparatus is provided with~~ at least one sputtering electrode [(6)] which contains deposition material [(A, B)] to be deposited, wherein the sputtering electrode is positioned such that the plasma [(P)] generated by the at least one plasma source [(3)] during use sputters material [(A, B)] from the sputtering electrode [(6)] on the substrate [(1)].

36. (Currently amended) An apparatus according to claim 35, wherein each sputtering electrode [(6)] is arranged downstream of the at least one plasma source [(3)], ~~while~~ and at least one sputtering electrode [(6)] is provided with at least one plasma passage to allow the plasma [(P)] to pass from the source [(3)] to the substrate [(1)].

37. (Currently amended) An apparatus according to claim 35[[or 36]], wherein the sputtering electrode [[[6]]] lies against the source [[[3]]].

38. (Currently amended) An apparatus according to ~~any one of claims 34–~~ claim 37, wherein the ~~apparatus is provided with~~ first deposition material source comprises at least one fluid supply channel (~~7; 120~~) to supply a material to be deposited, being in a volatile state, to the plasma [[[P]]].

39. (Currently amended) An apparatus according to ~~at least claims 35 and 38–~~ claim 38, wherein the at least one sputtering electrode [[[6]]] is provided with said fluid supply channel.

40. (Currently amended) An apparatus according to ~~at least claim 34~~, wherein the apparatus is provided with at least two plasma cascade sources (~~103, 103'~~) to generate at least two plasmas [[[P, P']]], wherein these plasma cascade sources (~~103, 103'~~) and the substrate positioning means (~~118, 118'~~) positioner are positioned such that opposite sides of the substrate (~~1; 101~~) during use make contact with the plasmas [[[P, P']]] generated by ~~[[those]]~~ the two plasma cascade sources (~~103, 103'~~) to deposit material on the opposite sides of the substrate [[[101]]].

41. (Currently amended) An apparatus according to ~~at least claim 34~~, wherein the apparatus is provided with a substrate supply roller (~~110~~) and a discharge roller (~~111~~), respectively, ~~[[for]]~~ to supply and discharge, respectively, ~~[[of]]~~ a substrate [[[101]]] that can be rolled up, such as a web and/or sheet-like substrate, to and from the processing chamber [[[101]]], respectively.

42. (Currently amended) An apparatus according to ~~at least claim 34~~, wherein a wall [[[104]]] of the processing chamber [[[102]]] is provided with at least one passage [[[105]]] to pass the substrate [[[101]]] into and/or out of that chamber [[[102]]].

43. (Currently amended) An apparatus according to claim 42, wherein at least a part of the at least one passage [[[105]]] of the processing chamber wall [[[104]]] is bounded by oppositely arranged feed-through rollers [[[106]]], ~~which~~ and the feed-through rollers

[[106]] are arranged to engage a part of the substrate [[101]] disposed between them during use, for the purpose of feed-through of the substrate [[101]].

44. (Currently amended) An apparatus according to ~~at least claim 41~~, wherein the apparatus is provided with a pair of rollers ~~deformation means (112)~~ to deform the substrate [[101]] which has unrolled from the supply roller [[110]].

45. (Currently amended) An apparatus according to claim 44, wherein the ~~deformation means (112)~~ pair of rollers are arranged to corrugate and/or serrate the substrate [[101]].

46. (Currently amended) An apparatus according to ~~at least claim 34~~, wherein the apparatus is provided with ~~means for vapor depositing material~~ a vapor deposition apparatus to vapor deposit material on the substrate ~~(1;101)~~.

47. (Currently amended) An apparatus according to ~~at least claim 34~~, wherein the apparatus is provided with at least one separate sputtering source ~~(121) for sputtering configured to sputter~~ material on the substrate [[101]].

48. (Currently amended) A catalyst provided with at least one carrier material [[B]] and at least one catalyst material [[A]], the carrier material comprising are oxidic material, and the carrier material further comprising at least one heat conducting material.

49. (Original) A catalyst according to claim 48, wherein the heat-conducting material comprises carbon.

50. (Currently amended) A catalyst manufactured according to ~~claim 48 or 49~~ obtained with a the method according to any of claim 1 ~~claims 1-38~~.